

LOCAL GOVERNMENT ASSOCIATION OF QUEENSLAND

ATTACHMENT 2

ECONOMIES OF SCALE IN QUEENSLAND LOCAL GOVERNMENT





An Analysis of Economies of Scale and Financial Sustainability in Queensland Local Government

**Information for the Consideration of the
Local Government Reform Commission**

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1. Introduction

The purpose of this Report is to determine if structural factors have an influence on economies of scale and financial sustainability in Queensland Local Government.

There is considerable debate in the media at present about the ideal size of Local Governments, varying from 'bigger is better' to 'amalgamations in other States in the past have reduced financial sustainability'. Much of this debate has not been informed by research.

Comparisons with Local Government in other States can be misleading, because of the differing policies State Governments have in relation to Local Government. For example, the amalgamations in Victoria in the 1990's were immediately followed by dissolving elected Councils who were replaced with Commissioners. The Commissioners were required to reduce Council Rates by 20 percent. Since this is well above the range of claimed savings from amalgamations, this required cuts to services and other costs. In many cases, cash reserves were depleted in this process and corporate costs were cut, thereby weakening the financial and organisational capacity of many Councils. Soon after this, the Victorian Government introduced Compulsory Competitive Tendering, which created a strong imperative to reduce overheads, but often had the consequence of further weakening organisational capacity. In simple terms, the Victorian government polices, in a climate of financial crisis, were focussed on cutting costs and introducing efficiencies, rather than improving organisational capacity. By contrast, the Queensland government has never introduced those policies.

In New South Wales, rate-pegging has been in place for several decades, whereby the Government sets the level of the annual rate increases, usually around the level of Consumer Price Index (CPI).. As the Local Government Association of Queensland (LGAQ) has shown, Local Government inflation in recent years has been well above the CPI. Therefore, restraining rate increase at below the level of Local Government inflation would also be likely to impact on financial sustainability. Again, this policy has never been applied in Queensland.

Because of the likely impact of State Government policies on financial sustainability, this Paper focuses on Queensland Local Governments.

2. Financial Sustainability

2.1 Financial Sustainability Reviews

Recently, the Queensland Treasury Corporation (QTC) has conducted comprehensive Financial Sustainability Reviews (FSR) for 105 of the 125 'mainstream' Queensland Local Governments.

QTC defined Financial Sustainability as "sustainability is the capacity to service current and future financial obligations". Its assessment incorporated analysing the following factors:

- business and economic environment
- financial forecast reasonableness
- forecast capital expenditure
- liquidity position
- maintenance of community equity
- fiscal flexibility
- capacity to manage core business risks, and
- operating position

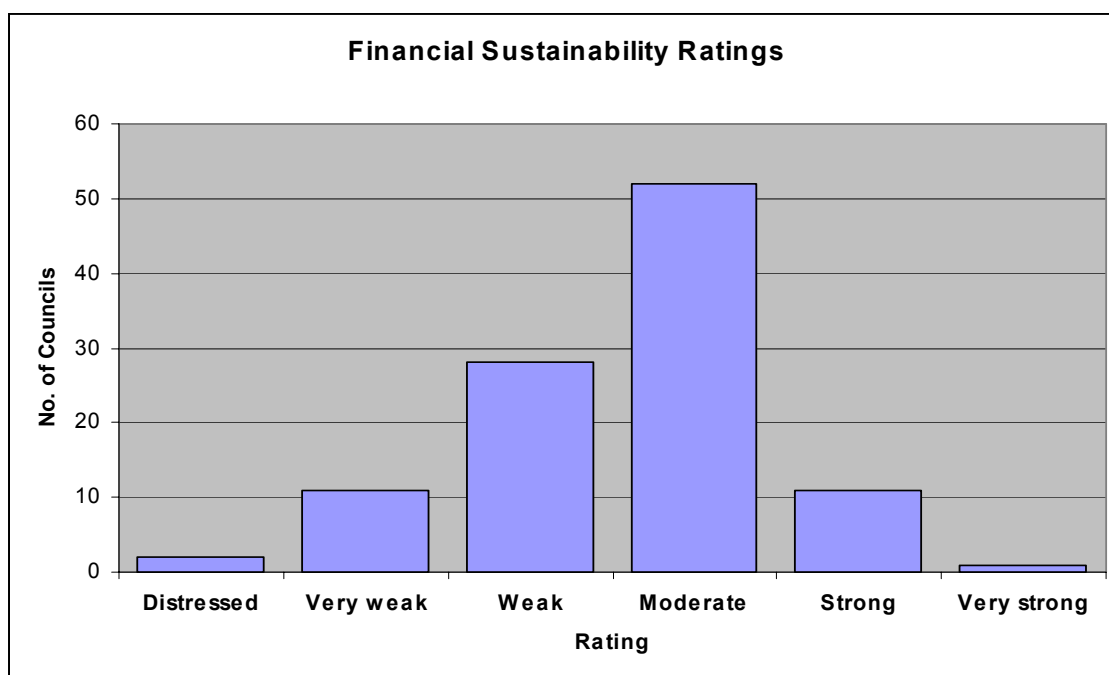
QTC then determined the Financial Sustainability Rating and Outlook, from the following range:

QTC Rating
Very Strong
Strong
Moderate
Weak
Very Weak
Distressed
QTC Outlook
Positive
Neutral
Developing
Negative

2.2 Financial Sustainability Results and Implications

Figure 2-1 shows the number of Councils in each QTC rating category. This graph uses the latest information provided by QTC, which is more recent than the list which was issued publicly.

Figure 2-1 QTC Financial Sustainability Ratings



Of the two distressed Councils, the Government has already addressed one Council (Johnstone Shire Council) through policy and legislative mechanisms. Initially the Department commissioned QTC to conduct a FSR on the Council in 2005. This review stated that the Shire Council would not survive unless fundamental changes were made, and recommended that the Council should undertake an organisational review which was conducted by ORION. Subsequently, the Council was dissolved by Parliament and an Administrator appointed. The other Council with a distressed rating is Murgon Shire, which ORION has no specific information. However, structural reform of distressed Councils such as amalgamation would be too slow to address the situation if it was in a similar position to Johnstone Shire. An amalgamation would not occur until March 2008, and it would take several years before any benefits or savings emerge. Alternative policy responses for distressed Councils are usually required, such as Departmental monitoring and advice, the new power to appoint a Financial Controller, or as a last resort, the appointment of an Administrator.

Therefore, the main focus of attention to prevent other Councils becoming distressed in the future is on the Very Weak group of Councils and possibly the Weak group.

2.3 Financial Sustainability Results from Earlier Amalgamations

During the 1990 amalgamation reviews, the Office of Local Government Commissioner (OLGC) undertook reviews of the financial positions of many of the Councils under review. The Author, as Director, Financial Review, and Deputy Local Government Commissioner developed a similar financial position scoring for these assessments. A comparison is shown in Fig xx. The OLGC financial assessments were based on techniques used by the Ratings Agencies, which is a similar approach applied by QTC. The OLGC methodology analysed financial flexibility and financial strength, with measures such as:

- Interest Cover,
- Reliance on External Funding, and

- Rate flexibility and arrears.

The following Table 2-1 shows a comparison between the QTC and OLGC Ratings.

Table 2-1 Comparison of QTC and OLGC Ratings

QTC Rating	OLGC Rating
Very Strong	Very Strong
Strong	Strong
Moderate	Stable
Weak	Constrained
Very Weak	Serious
Distressed	Critical

The following is a comparison of the financial ratings before and after amalgamations:

Ipswich City Council has recently been assessed by QTC as having a Strong financial sustainability, with a developing outlook. Prior to amalgamation, both Ipswich City and Moreton Shire, who were amalgamated to form the new Ipswich City Council, were assessed by OLGC as being Strong financially.

Woongarra and Gooburrum were amalgamated to form Burnett Shire, with the urban overspill areas in Woongarra transferred to Bundaberg City. Before amalgamation, OLGC rated Gooburrum and Strong, and Woongarra as Stable (Moderate). QTC recently assessed Burnett Shire as being Moderate, with a Developing Outlook. This rating is slightly below the pre-amalgamation average, however, the loss of the urban areas around Bundaberg could have reduced its financial capacity.

Before amalgamation, the then Mackay City was assessed as being Strong, but its outlook was negative. Pioneer Shire was assessed also as being Strong, with a positive outlook. Recently, QTC assessed the amalgamated Mackay City as Strong with a developing outlook.

Townsville and Thuringowa were both assessed by OLGC as having a Stable financial position, which is equivalent to QTC's Moderate rating. OLGC recommended major boundary changes and Joint Arrangements instead of amalgamation for these Councils. Recently, QTC assessed both Councils as Moderate, with a Neutral outlook.

It is more difficult to compare the results of the other amalgamations from the 1990's. Neither Gold Coast City Council nor Cairns City Council has undergone a QTC financial sustainability review, so this comparison cannot be made.

Warwick Shire was an amalgamation of four Councils – Warwick City, and Allora, Glengallan and Rosenthal Shires. At the request of those Councils, an independent review was conducted of the various options, and this was performed by John Larcombe and Bentleys Chartered Accountants. The consultants did not apply the OLGC financial capacity methodology, but assessed current and long term liabilities and discretionary cash balances. They assessed all of the Councils as being financially viable, which implies that

they were not distressed or very weak, nor strong or very strong. Therefore the Councils were likely to have been Weak or Moderate. Recently, QTC assessed the amalgamated Councils are being Weak, with a developing outlook. It is difficult to determine how this compares with the pre-amalgamation situation.

Gympie City and Widgee Shire were amalgamated to form Cooloola Shire in the early 1990's. the Councils jointly commissioned Coopers and Lybrand to conduct a cost-benefit analysis of potential amalgamation, and subsequently both Councils adopted the consultants recommendation to amalgamate, making this the only voluntary amalgamation in the 1990's. Coopers and Lybrand did not apply the OLGFC financial capacity methodology, but the report notes Gympie City's severely constrained finances, and implies that Widgee Shire had a stronger financial position. Recently QTC assessed the amalgamated Cooloola Shire as being the only Council in Queensland with a Very Strong rating, with a developing outlook. Although there are no directly comparable pre-amalgamation financial ratings, it is clear that Gympie City did not have a very strong financial capacity which the amalgamated Council now enjoys.

The conclusion of the pre and post amalgamation analysis is that, with the exception of Cooloola Shire, the financial situation has not changed markedly in the 12 or 13 years since these Councils were amalgamated. Neither have the two large Councils of Townsville and Thuringowa who were not amalgamated changed either. However, it should be borne in mind that most of the amalgamations in the 1990's were of Councils with large urban populations. Although some savings were identified as being possible, the primary reason for amalgamating these Councils was to improve planning and development of these centres and to overcome urban overspill problems identified by EARC. Only two amalgamations occurred in medium sized communities (Gympie/Cooloola, and Warwick), and there were no amalgamations in smaller communities, where greater economies of scale could occur.

In addition, there is anecdotal evidence that some of the new Councils have used increased financial capacity to undertake activities which would not have been possible before amalgamation. For example, Ipswich City Council financed the extension of the Centenary Highway to the Springfield area, which opened up that area for development. Similarly, Brisbane City Council constructed the Brisbane Entertainment Centre. In other words, it is possible that amalgamated Councils might attempt to maintain their level of financial sustainability and use any extra capacity to provide more services. The author was Finance Director at Ipswich City Council, and Treasury Director at Brisbane City Council. In general there is always pressure to do more with less, creating a challenge to provide additional services and facilities without harming financial capacity.

The analysis of the pre and post amalgamation financial sustainability ratings does not show strong evidence of amalgamations increasing financial sustainability per se. only one of the four amalgamated Councils with pre and post ratings showed an improvement. However, from the author's experience at Ipswich City Council, it appeared that the amalgamation gave the opportunity for increased service delivery capacity or improved financial sustainability.

2.4 Analysis of QTC Ratings

The QTC assessments are the most comprehensive financial capacity assessments ever undertaken in Queensland, and possibly Australia. With 84 percent of the mainstream Councils now assessed. Moreover, these reviews have been conducted over a consistent period and with a consistent peer review team. In addition, QTC has provided services to most of the Councils for nearly two decades, and thus has a working knowledge of most Councils. Therefore there is likely to be a high degree of consistency amongst the ratings.

For the purposes of the analysis, the QTC ratings have been converted to numbers ranging from 1, representing 'Distressed' to 6, representing 'Very Strong'. The four outlook

classifications were split into quarters and added to the rating score, to determine an overall FSR score. This is shown in Table 2-2.

Table 2-2 Financial Rating Scoring

Rating	
Very Strong	6
Strong	5
Moderate	4
Weak	3
Very Weak	2
Distressed	1
Outlook	
Positive	0.75
Neutral	0.5
Developing	0.25
Negative	0

The purpose of this section is to determine if there is a linkage between the QTC ratings and various factors. Possible factors examined are population, growth, density, and geographic size.

Figure 2-2 – Financial Sustainability v Population

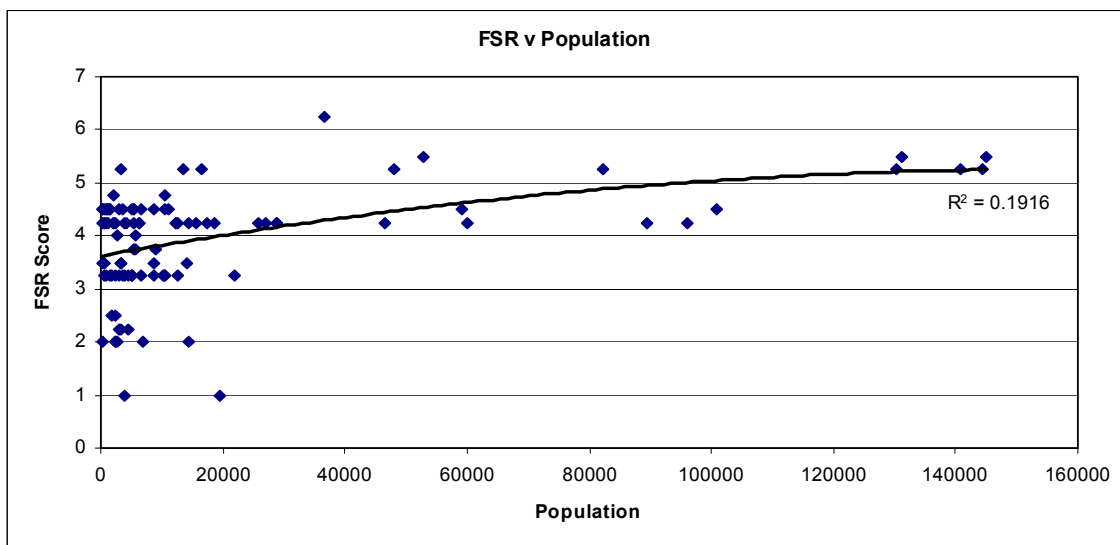


Figure 2-2 shows that there appears to be a trend for increasing financial sustainability with increasing population sizes of Councils. However, the R squared is only 0.19, which means that only 19 percent of the variation in financial sustainability is explained by the population, with the other 81 percent attributable to other factors.

Figure 2-3 Financial Sustainability by Population Range

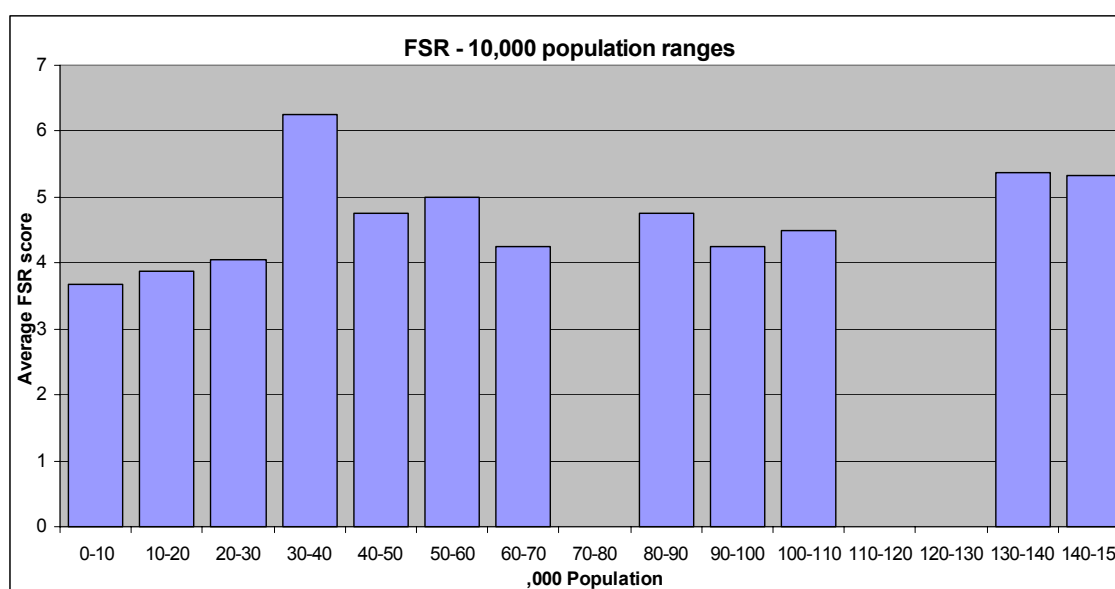


Figure 2-3 shows the average FSR scores by 10,000 population ranges. It implies that financial sustainability slightly increases up to 30,000, peaks at 30,000 to 40,000 population and then tapers off. However only one Council, Cooloolo Shire, is in the 30,000 to 40,000 range and this distorts the picture. However, it is noteworthy that Councils in the range of 60,000 to 110,000 population have lower average FSR scores than the 50,000 to 60,000 range. Councils over 130,000 are all large urban Councils who have implemented substantial reforms in recent years, including establishing commercialised business units. However, the recently announced new institutional arrangements for Water and Sewerage in South East Queensland, may affect this group.

2.5 Financial Sustainability Conclusion

The analysis shows that there appears to be a positive but small relationship between population size and financial sustainability. However, the relationship is only about 20 percent statistically accurate.

Increasing size possibly creates the opportunity to improve financial sustainability, but the evidence above indicates that there is only a one in five likelihood that this occurs in practice. This may be due to the continuing pressure on Local Government's to do more with less which offsets any benefits of scale.

The next section examines the degree to which scale economies exist in Queensland Local Government. In reality, improved financial sustainability is more likely to occur if there are economies of scale which can lead to reduced cost structures.

Figure 2-4 FSR and Population Growth

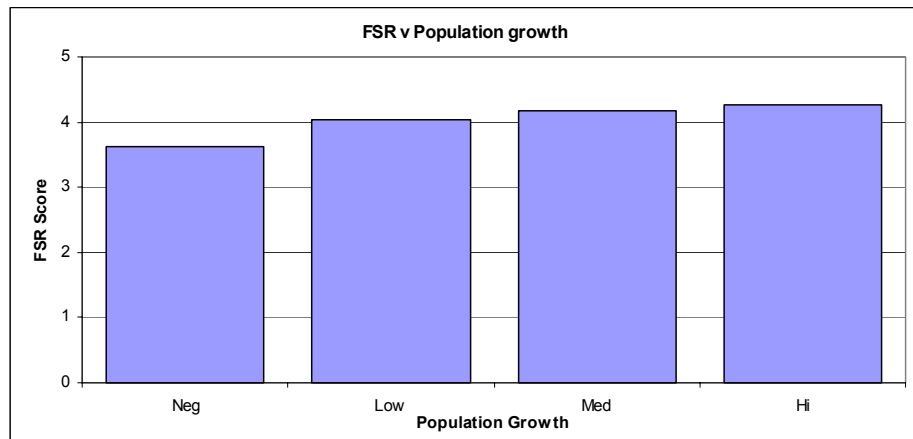


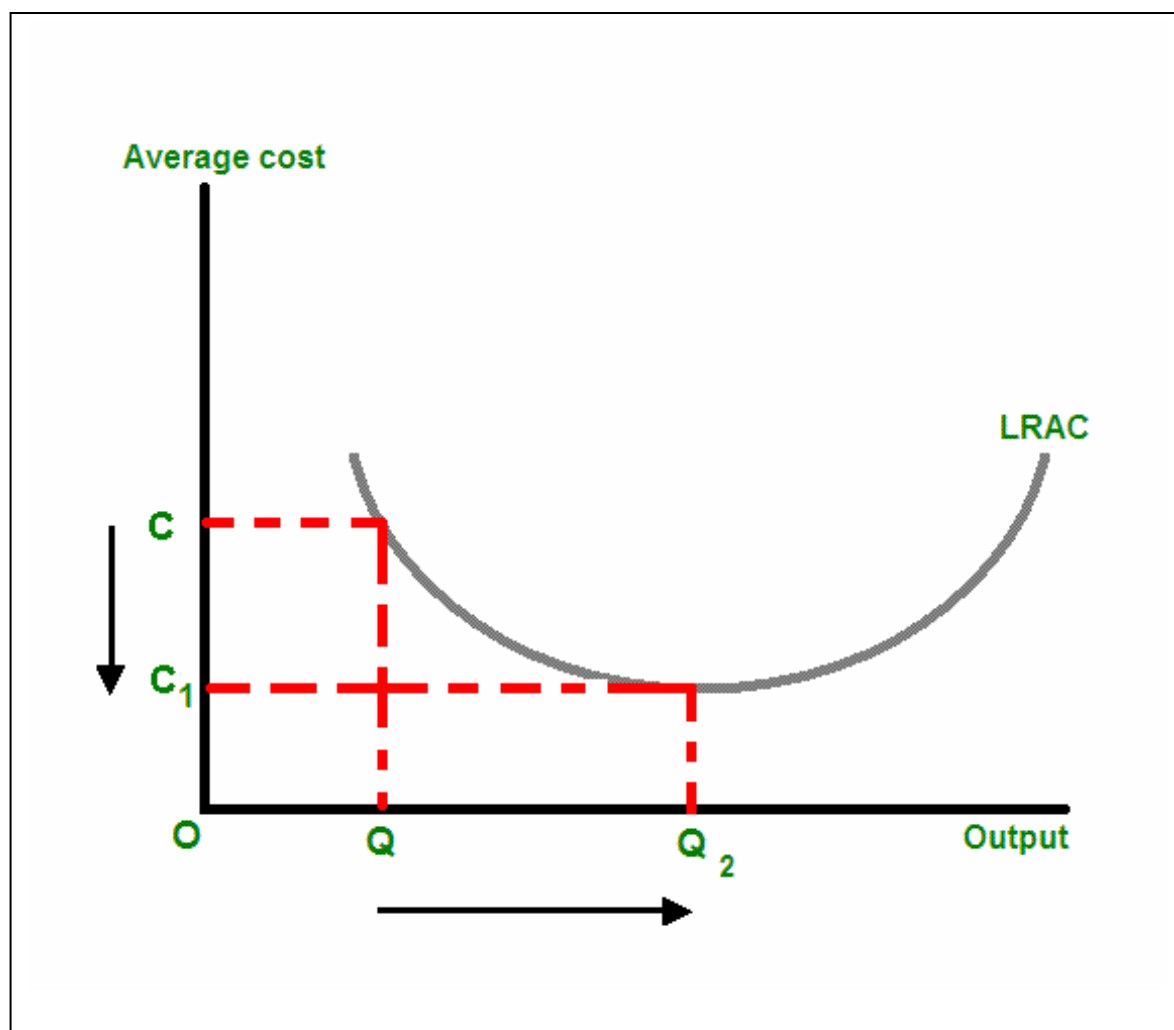
Figure 2-4 shows that there appears to be some relationship between population growth and the FSR score, with financial sustainability increasing gradually with increasing population growth. However, the regression of the individual scores only shows a 10 percent relationship between these factors (R squared of 0.1). There also appears to be a small relationship between financial sustainability and population density, however it only explains 6 percent of the variations.

3. Economies of Scale

3.1 Concept of Economies of Scale

Before analysing whether economies of scale exist in Queensland Local Government, it is important to understand the concept of economies of scale (or scale economies). Figure 3-1 demonstrates the concept of economies of scale, where the Long Run Average Cost (LRAC) initially reduces as output increases, until it reaches an optimum point, after which diseconomies of scale occur and the LRAC increases.

Figure 3-1 Economies of Scale Concept Diagram



In discussion on Local Government in Queensland it is often claimed that there are economies of scale associated with the increasing population size of Councils.

In the private sector there is evidence of economies of scale associated with purchasing, financing, production and administration. Of these functions, economies of scale for financing have already been captured by the operation of Queensland Treasury Corporation (QTC) which has reduced the cost of financing to Local Government, so that even the smallest Council can borrow at the same rate as the largest, whereas there were considerable variations beforehand. Many savings have also been captured through bulk purchasing arrangements for Queensland Local Government, such as Local Buy and access to State purchasing contracts.

This leaves production and administration as the areas with opportunities for economies of scale in Local Government. In relation to Council services (production), scale economies vary widely depending of the nature of the function. For example, the optimum scale of an engineered landfill operation is likely to be regional or greater, whereas the optimum scale for grass cutting is just enough parkland to fully utilise each item of mowing equipment. Discussions with the General Manager of Local Government Infrastructure Services (LGIS) indicate that scale economies for many of the functions they are investigating have optimum service areas spanning several regions of Queensland.

Another aspect of scale economies relating to Council functions relates to the possibility of economies of scope. Many Councils with smaller populations but large areas, have expanded their operations to provide additional services. This often includes a wide range of services, from housing, through to road contracting. Examples are Dalrymple, Wambo and Bungil Shires which have become virtual road contractors with the profits funding human service functions. By increasing the scope of their activities they appear to be attempting to achieve economies of scale.

Administrative savings from scale economies are a key area of focus in relation to Queensland Local Government reform. During the last round of Local Government reform in the 1990's, OLGC undertook extensive modelling of overhead costs in relation to population size, which demonstrated high diseconomies of scale in the first 10,000 of population, with an optimal point somewhere between 50,000 and 100,000 population. At that time there were only a few Queensland Councils with population over 100,000 and these had overheads higher than those in the 50,000 to 100,000 population range. The data analysed by OLGC was the level of overheads (General Public Services (GPS)) which was published by the Australian Bureau of Statistics (ABS).

3.2 Data Limitations

Unfortunately, ABS no longer publishes this GPS data. However, the data is still collected by DLGPSR and passed on to the Queensland Local Government Grants Commission (Grants Commission) but is not published. In recent years, the Grants Commission has completely reassessed its methodologies, and this has included extensive statistical analysis of Queensland Local Government cost structures. Discussions with Grants Commission officers at the time indicated that they were unable to identify scale economies in any function beyond a population level of 20,000. The Grants Commission currently allows a 'flagfall' cost of \$300,000 per administrative centre in its calculations, based on its statistical analysis. It may be useful for the Reform Commission to obtain these statistical analyses.

In the absence of data on Council overheads (GPS), ORION has undertaken extensive statistical analysis of Council staffing ratios on Queensland.

3.3 Statistical Modelling results

A commonly claimed advantage of mergers of Local Governments is the potential for reduced costs through economies of scale, particularly in relation to corporate overheads. Unfortunately, statewide information is not published for corporate overheads (General Public Services) in Queensland Local Government. However, employee levels are published by DLGPSR (2004/05). As the number of employees is a key cost-driver in Local Government, any economies of scale will be important.

Figure 3-2 Employees Per 100 Population to Population

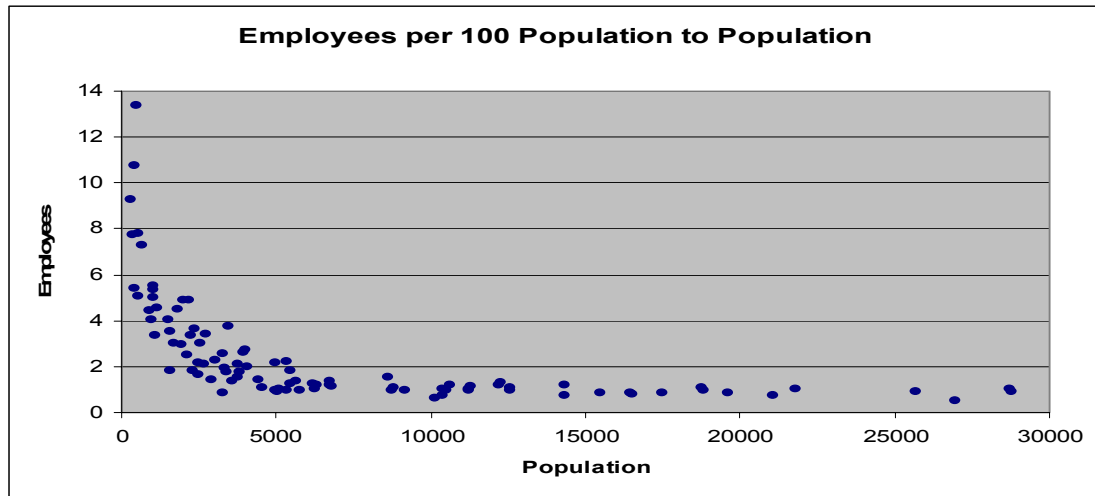
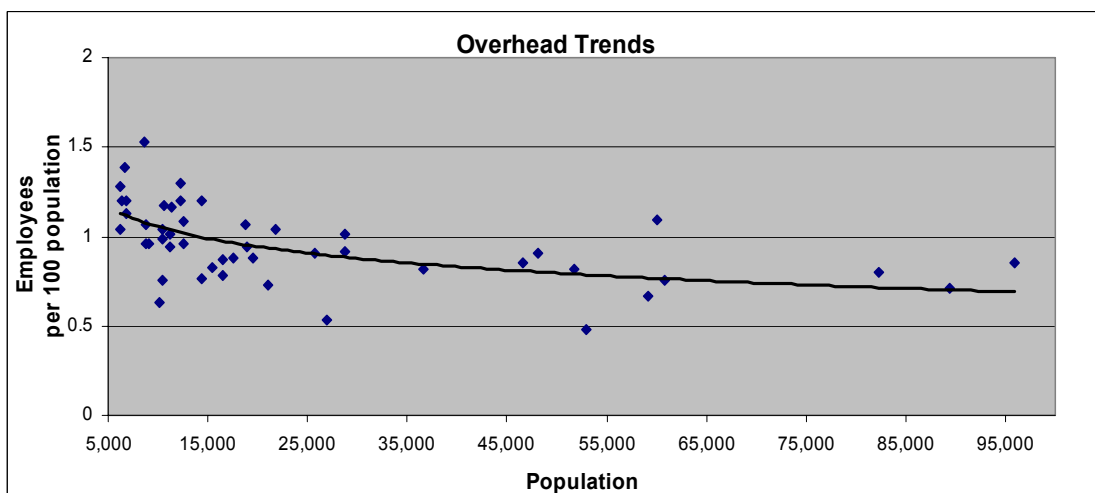


Figure 3-2 shows that there are significant economies of scale especially in the first 5,000 population range. The following graph (Figure 3-3) focuses on the population range of 6,000 to 100,000 and shows that economies of scale still exist in this range. The two higher results after 80,000 and one at around 60,000 could indicate potential diseconomies above that population range. However, each of these Councils are major regional centres (Rockhampton, Mackay and Toowoomba) which service a greater daily population and commercial sector than other Councils. Therefore, economies of scale still appear to exist at least up to the medium size population level.

The degree of predictability of economies of scale appears to decline as the population ranges tested increases. The first 10,000 population range has a trend line with 0.59 R Squared which means it explains 59 percent of the variations while other factors would be attributable for the other 41 percent. However, the overall results for all Queensland Councils has only 40 percent predictability. In populations over 50,000 the predictability drops to insignificant levels. Therefore economies of scale are only statistically reliable using indoor staff ratios for populations up to 50,000.

Figure 3-3 Overhead Trends



Factors other than population size were also examined to determine if they influence Council efficiency levels. The population density of an area was found to give 26 percent predictability of indoor staff levels. It makes sense that efficiency could have some

relationship with population density, since a more densely populated area would involve less travel time between facilities and properties being serviced. Population growth was found to be able to predict 18 percent of the results. No statistically significant results were found with comparing road length to indoor staffing levels. It should be noted that there may be correlations between these factors (eg. low population areas may have low or negative growth and low population density) which means that the above percentages could overlap and cannot validly be added. Unfortunately the short timeframes did not provide time to test for multi-variables, which are likely to exist.

A range of statistical analyses were performed using Microsoft Excel and the statistical software package SPSS. Attempts were made to determine if there is any significant relationship between indoor, Council staff ratios and the following variable:

- Population;
- Population density;
- Population growth; and
- Road length.

3.4 Statistical Commentary

In conducting this research, a range of statistical analyses (called regressions) were conducted to determine the relationships between staffing ratios and other variable. The graphs in the Appendix show the trend-lines which gave the best R squared without giving nonsensical results (such as negative staff numbers). The following outlines the concept of R squared. For the remainder of this paper, the term 'percentage predictive ability' or similar will be used instead of R squared.

R squared is the relative predictive power of a model. R squared is a descriptive measure between 0 and 1. The closer it is to one, the better your model is. By "better" we mean a greater ability to predict. A value of R squared equal to one, implies that the regression provides perfect predictions.

R squared denotes the percentage of variation in the dependent variable accounted for by the independent predictor variables. For example, an R-squared value of .49 means that 49% of the variance in the dependent variable can be explained by the regression equation. The other 51% is unexplained. So in other words R squared measures the overall strength of association between the variables. It is often interpreted as the proportion of response variation "explained"

R squared may be interpreted directly as the proportion of variance in the dependent variable that can be accounted for by the regression equation. (Relationships between each variable).

A caution that applies to R squared and other statistical descriptions of correlation and association is that "correlation does not imply causation."

In other words, while correlations may provide valuable clues regarding causal relationships among variables, a high correlation between two variables does not represent adequate evidence that changing one variable has resulted, or may result, from changes of other variables.

3.5 Conclusions – Economies of Scale

The analysis shows that there appears to be some relationship between Council indoor staff levels for populations up to 50,000, with greater economies of scale and predictability in the first 5,000 to 10,000 population ranges. However, these trends only explain 50 to 60 percent of the variations in staff levels across the State. Above 50,000 population there is no statistical connection between indoor staff levels and population size. There also appears to be linkage between staff size and population growth and density.